



**Development
Services Agency**

BROWNFIELD REVOLVING LOAN FUND CLEANUP APPLICATION For Petroleum Cleanup Projects

Part C ENVIRONMENTAL INFORMATION

March 2013

Attachment C1

Project Assumptions and Cost Estimate (PACE)

ATTACHMENT C1

Project Assumption and Cost Estimate (PACE) Document

1.0 Overall Costs

The BRLF loan monies for this project will be concentrated towards the remediation/cleanup of Identified Area #8, which includes, the removal and disposal of PCB containing drum(s) of oily sludge and liquids, as well as, the surrounding soils associated with the deteriorated buried drums of waste. Therefore, the estimated project costs breakdown as follows:

Acquisition: \$ 0.00 – Completed

Demolition: \$ 0.00 – Completed

Infrastructure: \$ 0.00 – Completed

Cleanup/Remediation: \$ 2,000,000.00.

2.0 Major Tasks

The major task associated with the project include:

- Development of Revised Workplans/Specifications/Bidding
- Award of Contract to an Environmental Remediation Contractor
- Remedial Contractor - Site Mobilization
- Additional Environmental Assessment of IA#8 using a grid system
- Additional Waste Profiling Sampling/Approval of Waste Stream by the Permitted Disposal Facility(s)
- Pretreatment of Waste (Removal of Free Liquids, if necessary)
- Containerization and Waste Disposal Sampling of Surface Water Associated with IA#8
- Removal, Loadout of Wastes and Transportation of Waste to Disposal Facility
- Waste Disposal by a Permitted Landfill, if applicable
- Waste disposal using incineration
- Confirmation Sampling (side walls and bottom of excavated areas for compliance)
- Backfilling of excavated IA#8, using a VAP clean backfill source (imported fill)
- Placement of 2-feet of clean backfill over IA#8, Revision of Environmental Covenant, as appropriate for the Property
- Addenda to the VAP NFA documents for submittal to OEPA

3.0 Estimates for Soil, Groundwater and Other Environmental Media

The estimated soil and waste to be removed from IA# 8 is:

Volume: = IA#8 Area X Depth 6'
 = 3,372 SF X 6'
 = 20,232CF
 = 749 CY
 = 749 CY X 1.8 tons/cy
 = **1,349 tons of soil**

4.0 Backfill Estimates

The backfill estimates include the placement of clean fill in the excavated area of IA#8 and the placement of 2-feet of clean fill over the PAH area are as follows:

PAH area backfill – 450'X30'X2' = 1,000 cy. X \$50/cy = \$50,000.00

IA#8 clean fill – 55'X101'X6' = 1,224 cy. X \$40/cy = \$48,950.00

Anomaly 1 – 14'X56'X6' = 174 cy X \$ 40 = \$6,960

TOTAL: \$105,910.00

5.0 Demolition and Debris Disposal Estimates

Due to the fact that all demolition activities have previously been completed, there are no anticipated costs associated with this task.

6.0 General Waste Estimates

Based on the environmental assessment information gathered to date for IA#8, and the GPR survey work and subsequent investigation of the GPR identified anomalies conducted in/on IA#8, the following estimated volume of PCB waste materials (soils and drums) will be removed from the subject property.

Volume: = IA#8 Area X Depth 6'
 = 3,372 SF X 6'
 = 20,232cu.ft.
 = 749 cu.yds
 = 749 cu.yds. X 1.8 tons/cu.yds
 = **1,349 tons of soil**

7.0 Detailed Costs

See Attachment for this information.

**Detailed Cost Estimate For the
Former Joseph Demsey Steel Company
Remediation of IA#8 Project**


Item No.	Description	Est. Quantity	Unit Price	Total
1	Remedial Contractor - Site Mobilization/Demobilization	2.0	\$9,350.00	\$18,700.00
2	Health & Safety Plan, Permits, SWPPP	1.0	\$8,700.00	\$8,700.00
3	Engineering, Bid Assistance, Prep Contract Documents, Remedial Plans and Additional Environmental Assessment of IA#8	1.0	\$200,000.00	\$200,000.00
4	Additional Waste Profiling Sampling/Approval of Waste Stream by the Permitted Disposal Facility(s)	1.0	\$15,000.00	\$15,000.00
5	Pretreatment of Waste (Removal of Free Liquids, if necessary)	750 tons	\$5.00	\$3,750.00
6	Containerization and Waste Disposal Sampling of Surface Water Associated with IA#8 (Non-Haz)	10,000 gallons	\$.50	\$5,000.00
7	PCB Soils Removal, Loadout of Wastes and Transportation of Waste to Disposal Facility (Landfill, Michigan)(Non-HAZ)	350 tons	\$215.00	\$75,250.00
8	PCB Soils Removal, Loadout of Wastes and Transportation of Waste to Disposal Facility (Incineration, Texas)(Hazardous)	1,000 tons	\$1,000.00	\$1,000,000.00
9	Waste Disposal by a Permitted Landfill, if applicable (Non-HAZ)	350 tons	\$90.00	\$31,500.00
10	Waste Disposal using Incineration (Hazardous)	1,000 tons	Included in #8	\$ 0.00
11	Backfilling of excavated IA#8, using a VAP clean backfill source (imported fill)	1,398 CY	\$45.00	\$62,910.00

12	Placement of 2-feet of VAP clean backfill over IA#8	1,000CY	\$35.00	\$35,000.00
			Subtotal	\$1,455,765.00
13	Contingency – 10%	1.0		\$145,576.50
			TOTAL	\$1,601,341.50

Cost Proposal Prepared By:

ms consultants, inc.

(Company Name)



Authorized Company Representative – Signature
John P. Pierko – Certified Professional # 186

JAN 15, 2016

(Date)

John P. Pierko

(Authorized Company Representative – Printed)

Attachment C2

3rd Party Cost Estimates for Project Activities greater than \$25,000

**3rd Party Cost Estimate For the
Former Joseph Demsey Steel Company
Remediation of IA#8 Project**


Item No.	Description	Est. Quantity	Unit Price	Total
1	Remedial Contractor - Site Mobilization/Demobilization	2.0	\$18,700.00	\$18,700.00
2	Health & Safety Plan, Permits, SWPPP	1.0	\$8,000.00	\$8,000.00
3	Additional Environmental Assessment of IA#8 using a grid system	1.0	\$70,000.00	\$70,000.00
4	Additional Waste Profiling Sampling/Approval of Waste Stream by the Permitted Disposal Facility(s)	1.0	\$15,000.00	\$15,000.00
5	Pretreatment of Waste (Removal of Free Liquids, if necessary)	750 tons	\$60.00	\$45,000.00
6	Containerization and Waste Disposal Sampling of Surface Water Associated with IA#8 (Non-Haz)	10,000 gallons	\$1.85	\$18,500.00
7	PCB Soils Removal, Loadout of Wastes and Transportation of Waste to Disposal Facility (Landfill, Michigan)(HAZ-direct disposal without treatment)	350 tons	\$245.00	\$85,750.00
8	PCB Soils Removal, Loadout of Wastes and Transportation of Waste to Disposal Facility (Incineration, Texas)(Hazardous)(End Dump Trucks)	1,000 tons	\$1,365.00	\$1,365,000.00
9	Waste Disposal by a Permitted Landfill, if applicable (Non-HAZ)	350 tons	\$105.00	\$36,750.00
10	Waste Disposal using Incineration (Hazardous)	1,000 tons	Same as # 8	Same as # 8
11	Backfilling of excavated IA#8, using a VAP clean backfill source (imported fill)	1,398 CY	\$39.00	\$54,522.00
12	Placement of 2-feet of VAP clean backfill over IA#8	1,000CY	\$39.00	\$39,000.00

13	Contingency – 10%	1.0		\$175,622.00
			TOTAL	\$1,931,844.00

Cost Proposal Prepared By:

Environmental Remediation Contractor

(Company Name)


Authorized Company Representative – Signature)

1-4-16
(Date)

JASON RUFF

(Authorized Company Representative – Printed)

Attachment C3

Remedial Plans

Attachement C-3

“DRAFT” PCB REMEDIATION SCOPE OF WORK

**Former Joseph Demsey Steel Company
Youngstown, Trumbull County, Ohio**

**June 23, 2015
December 15, 2015 (Revision 1.0)**

Background

ms consultants, inc.. (ms) performed a Phase II Property Assessment (Phase II) pursuant to the Ohio EPA Voluntary Action Program (VAP) rules at the site known as the Former Joseph Demsey Steel Company (JDSC - the “Property”), located at 1300 South State Street in the City of Youngstown, Trumbull, County, Ohio. Funding for this assessment project was received by the City of Youngstown through the Clean Ohio Assistance Fund. The volunteer and owner for the Property is the City of Youngstown. Following successful remediation and issuance of a Covenant Not to Sue (CNS) by the Ohio EPA, the Property will be re-purposed for future use as an equipment storage and supply yard by a local steel pipe manufacturer. The Property contains 14.77 acres of commercial/industrial land (Figure 1).

Initial remediation activities were implemented at the Former Demsey Steel Company Property (IA#8) in July 2015, however, during the remedial activities, an unknown number of buried drums containing liquid and oily sludge were encountered within the pre-defined IA#8 remedial area limits. As a result, additional soil and sludge characterization samples were collected from IA#8, and based on the analytical results a portion of the waste will require incineration. Due to this discovery, the remedial project was postponed until funding could be secured to address the change in the waste stream characterization (See the analytical data, provided on the enclosed CD for your reference. This plan shall be revised accordingly, once the limits of the buried drums/waste have been fully delineated and sampled using a grid system.

Site Assessment and Characterization

The site has been the subject of Phase I and Phase II Property Assessments under the Ohio EPA VAP. The majority of site assessment and remediation activities occurred at the Property between approximately October 2009 and June 2014. The site was determined to meet applicable VAP standards and on July 23, 2014 a No Further Action (NFA) was submitted to the Ohio EPA in support of a request for a CNS. The NFA is currently under review by the Ohio EPA. Additional assessment work was performed in April 2015 when installation of a sub-grade utility line encountered an area of oil-stained soil. Assessment work completed to date includes the installation of 26 soil borings, converting 11 of the borings into two inch monitoring wells, and collecting 45 near surface soil samples from the VAP soil direct contact point of compliance (i.e., 0 to 2 feet).

Laboratory analyses indicate that the site has been impacted by the past industrial use of the Property. Elevated levels of some chemicals of concern (COCs) were identified in soil including single-compound polyaromatic hydrocarbons (PAHs) such as, naphthalene and benzo(a)pyrene, total petroleum hydrocarbons (TPH) diesel and oil ranges (C10-C20 and C20-C34, respectively); polychlorinated biphenyls (PCBs); and lead. Remediation activities conducted at the Property to achieve compliance with applicable soil standards include active soil removal and clean fill placement.

Detectable concentrations of total PCBs in soil ranged at the site between 0.043 mg/kg and 2,100 mg/kg. Initially only two specific soil sample locations were determined to have PCBs concentrations above the applicable TSCA threshold of 50 mg/kg – DSS-6, 0-1' (240 mg/kg) and DSB-15, 0-2' (190 mg/kg). Other occurrences of PCB impact in soil had concentrations below the TSCA limit. PCB contaminated soil characterized by DSS-6, 0-1' (240 mg/kg) was successfully remediated from the site in May 2012.

The PCB contaminated soil above TSCA limits at sample location DSB-15, 0-2' was discovered during the additional assessment activities triggered by the utility work in 2015 as shown in *Figure 13c* (Attachment A). The vertical and horizontal extent of this PCB contamination has been delineated and its remediation is the subject of this scope of work. The laboratory analytical report from recent 2015 assessment sampling (i.e., DSB-11 through DSB-26 and DSS-16 through DSS-20) is provided as Attachment B. Notification of this scope of work has been provided to the USEPA, Region V PCB Coordinator.

PCB Cleanup Standard

The PCB standards for a No Further Action (NFA) letter under the VAP are dependent upon the future intended land use. At this site, the Property is being redeveloped for commercial/industrial use and will be deed restricted to this land use through enactment of an Environmental Covenant. The cleanup standard for direct contact with PCB-contaminated soil is the VAP commercial/industrial standard of 18 mg/kg. The point of compliance for this standard is the upper two feet of soil, meaning that below two feet the PCB concentration could exceed 18 mg/kg; however, cannot exceed 50 mg/kg. No dissolved PCBs or LNAPL with the potential to contain PCBs were detected in ground water below the Property; therefore, ground water remedial actions related to the PCB contamination are not planned.

The following remedial actions will be implemented at this site in order to ensure compliance with the applicable VAP standards and TSCA limits:

- Soil in the defined area of PCB impact will be actively remediated through excavation. Refer to *Figure 14 – Area Proposed for Active PCB Soil Remediation* in Attachment A for the approximate location and dimensions of the proposed excavation. The soil volume estimated to be handled as TSCA regulated waste is as follows:

TSCA Regulated PCB contaminated soil:

Volume	=Area x Depth = 2,625 ft ² x 4.0 feet = 10,500 feet ³ = 390 yards ³
Tons	= 390 yards ³ x 1.5 tons/ yards ³ = 585 tons

- As directed by ms, excavated soil material from the remediation area, will be loaded, transported, and disposed of at a facility licensed to accept such material. The contaminated soil to be removed from the remediation area will be “live loaded” and immediately transported from the site without stockpiling.
- Backfilling of the excavation is not a part of this scope of work and will be handled separately by another contractor performing work on the adjacent property.

The goal of the assessment and remediation project work being conducted on the Property is to demonstrate that applicable and appropriate TSCA (as it pertains to the PCB contamination) and VAP standards have been met so that the results can be compiled into a

comprehensive NFA document in accordance with the VAP rules and requirements and a CNS can be issued for the Property by the Ohio EPA.

Remediation Roles and Responsibilities

This project is being conducted under the Ohio EPA VAP and, therefore, remediation activities will be performed under the direction of the VAP Certified Professional. Responsibilities for work elements will be divided between the Environmental Consultant and the Remediation Contractor as described below:

Environmental Consultant – **ms consultants, inc. (ms)** is the Environmental Consultant for this project. The Environmental Consultant will provide the Certified Professional supervision of on-site remedial activities with respect to technical project objectives. The locations and limits of the excavation will be field located by the Environmental Consultant. Based on the analytical results obtained, the area of PCB soil contamination above applicable VAP standards and TSCA limits shall be defined and the soil will be over-excavated to those confirmed 'clean' points; therefore, post-remedial confirmatory samples shall be collected to determine if the applicable action levels have been achieved. However, as necessary, based on site conditions encountered during remedial activities, confirmatory soil sampling and analysis for the purpose of demonstrating compliance with VAP standards may be performed. Any confirmatory sampling needed will be the responsibility of the Environmental Consultant.

Remediation Contractor – The Remediation Contractor will be responsible for supplying all equipment, labor and material to complete the scope of work described herein. The Remediation Contractor will be responsible for the health and safety of all of its workers, including preparation of a Health and Safety Plan. Securing the work site with respect to health and safety, including but not limited to the placement of fencing and warning signs around the excavation area, will be the responsibility of the Remediation Contractor. The Remediation Contractor will also be responsible for securing and maintaining any necessary permits for conducting the remedial actions including (as may be required) permits for excavation, water discharge, transportation of wastes, and waste disposal. Any sampling and analysis necessary to obtain or maintain permits, including any additional waste characterization for disposal purposes, will be the responsibility of the Remediation Contractor. Waste characterization sampling was previously performed on impacted soil contained in nine roll-off boxes generated from the subject PCB source area during utility installation activities. These previous waste

characterization analytical results are considered representative of the material proposed to be remediated and are provided for reference in Attachment B.

Scope of Remediation Contractor Work

The Remediation Contractor's scope of work will include implementing the "Active Remediation" on this project, which consists of the excavation, transportation, and disposal of contaminated soil at the direction of the Environmental Consultant. The Remediation Contractor will be responsible for providing all labor, material, equipment, and any permits that may be required to perform the following tasks:

- Prepare and implement a site-specific Health & Safety Plan. The Remediation Contractor will be responsible for the health and safety of its workers and for securing the work site with respect to health and safety matters (e.g., providing a security fence and warnings signs around all open excavations).
- Excavate the PCB contaminated soil as directed by the Environmental Consultant.
- Load, transport, and dispose of the PCB contaminated soil at a facility licensed and permitted to accept soil of this nature.
- Conduct any sampling and analysis necessary to properly characterize the excavated material for acceptance at a disposal facility.
- Provide manifests and weigh tickets for each load of excavated material removed from the site.

The Environmental Consultant will direct and document the remedial activities, described above, to be performed by the Remediation Contractor. Although the Remediation Contractor and the Environmental Consultant will coordinate activities, the Environmental Consultant (i.e., the VAP Certified Professional) will ultimately be responsible for certifying that standards have been met and that the objectives of this work plan have been satisfactorily achieved.

PCB-Contaminated Soil Disposal

Soils impacted by PCBs will be transported and disposed of at US Ecology, located in Belleville, Michigan or incinerated, as required. The Remediation Contractor will provide a complete waste manifest for each load of contaminated soil removed from the site.

Contact Information

For additional information or questions regarding the technical aspects of this project, please contact the Environmental Consultant at the following address:

Mr. John Pierko
ms consultants, inc.
333 East Federal Street
Youngstown, Ohio 44503
Phone: (330) 744-5321
Email: jpierko@msconsultants.com

The current owner of the Property can be contacted at the following address:

The City of Youngstown
Office of Economic Development
C/o T. Sharon Woodberry
20 Federal Plaza Building, Suite FC-12
Youngstown, Ohio 44503
Phone: (330) 744-1708
Email: TSWood@CityofYoungstownOH.com

Attachments:

Attachment A: Figures

Attachment B: Laboratory Analytical Reports, Chain-of-Custody Forms and Affidavits

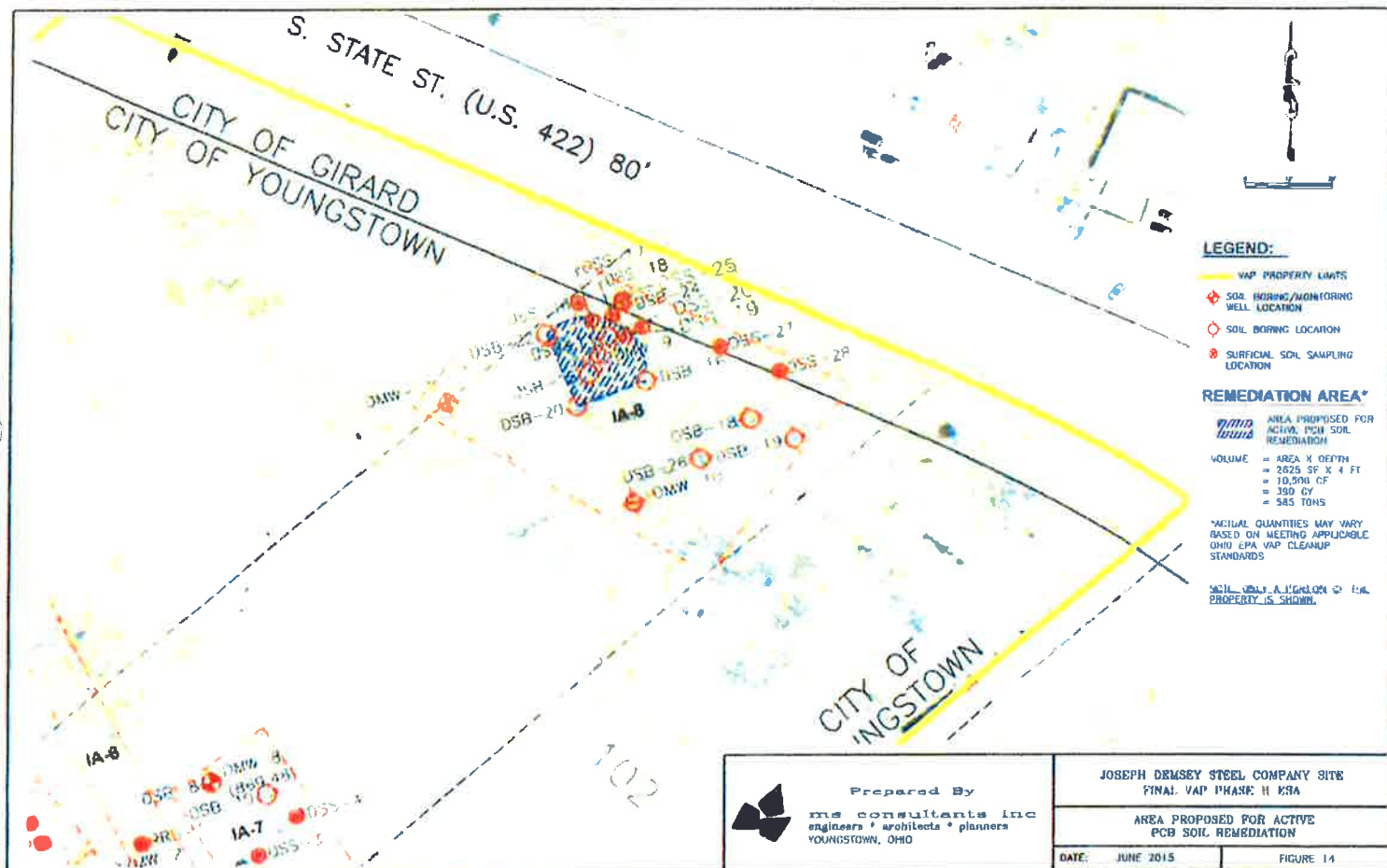
ATTACHMENT

A

ATTACHMENT A
Figures



As of 01/17/2015, the City of Youngstown is the owner of the property shown on this map. The map is for informational purposes only and does not constitute a warranty or representation of any kind.



ATTACHMENT

B

ATTACHMENT B

Laboratory Analytical Reports, Chain-of-Custody Forms and Affidavits



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 17 2015

REPLY TO THE ATTENTION OF:
LU-9J

Ms. T. Sharon Woodberry
Office of Economic Development
20 Federal Plaza Building, Suite FC-12
Youngstown, Ohio 44503

RE: Self-Implementing PCB Remediation Work Plan
Former Joseph Demsey Steel Company
1300 South State Street, Youngstown, Ohio

Dear Ms. Woodberry:

The U.S. Environmental Protection Agency has reviewed the June 17, 2015 Polychlorinated Biphenyls (PCB) Remediation Work Plan (Work Plan) and the supplemental information provided in the July 13, 2015 letter and July 14, 2015 email. This information was submitted on your behalf for the remediation of PCB contaminated soil at the Former Joseph Demsey Steel Company facility in Youngstown, Ohio.

The Work Plan and supplemental information describes the soil and groundwater characterization data collected at the facility and details the proposed excavation and disposal plan for PCB Remediation Waste. The Work Plan states that you will excavate and dispose of all PCB soil discovered within the Investigation Area 8 (IA-8) location with concentrations ≥ 25 milligrams per kilogram (mg/kg) off-site. PCBs were not detected in facility groundwater wells.

The EPA has determined that the Work Plan meets the self-implementing cleanup and disposal requirements of 40 CFR §761.61(a) for cleanup and disposal of PCB remediation waste. The Work Plan is hereby approved subject to the following conditions:

1. As stated in 40 CFR §761.61(a), you must conduct the cleanup in accordance with all applicable requirements of 40 CFR §761.61(a)(1) through (9). To assist you in completing the cleanup successfully, the enclosure identifies specific conditions related to the requirements and are noted in bold italics following the regulatory citation.
2. You must prepare a Cleanup Completion Report that documents how you conducted the PCB cleanup in accordance with the applicable regulatory requirements, including those marked with an "X" in the enclosure. This report is due within six months after the completion of remedial activities under this approval.

3. You must notify us thirty days prior to any change in ownership of the property. Such notice must include the name, address and telephone number of the new owner, and the name of the new owner's contact person for this facility. You must also submit a letter, signed by the potential purchaser stating whether it plans to maintain the low occupancy land use or whether it intends to remove and dispose of additional PCB-contaminated materials off-site instead.

This letter does not relieve the City of Youngstown from compliance with any other federal, state or local regulation and does not preclude EPA from initiating any enforcement action, including an action seeking civil penalties for any violation of federal regulations. All applicable requirements of TSCA and its regulations will continue to apply to the site after any transfer in ownership.

If you wish to make any changes to your Work Plan (including changes in the project schedule), then you must submit your proposal to Peter Ramanauskas, of my staff, in writing no less than 14 calendar days prior to the proposed implementation of the change. If you have any questions, please contact him at ramanauskas.peter@epa.gov or (312) 886-7890.

Sincerely,



Jose G. Cisneros, Chief
Remediation and Reuse Branch

Enclosure

cc: Mr. Timothy Wilson, OEPA
Mr. John P. Pierko, P.E., MS Consultants

ENCLOSURE

Regulatory Requirements of 40 CFR §761.61(a)

(4) **Cleanup levels.** For purposes of cleaning, decontaminating, or removing PCB remediation waste under this section, there are four general waste categories: bulk PCB remediation waste, non-porous surfaces, porous surfaces, and liquids. Cleanup levels are based on the kind of material and the potential exposure to PCBs left after cleanup is completed.

(i) **Bulk PCB remediation waste.** Bulk PCB remediation waste includes, but is not limited to, the following non-liquid PCB remediation waste: soil, sediments, dredged materials, muds, PCB sewage sludge, and industrial sludge.

(B) **Low occupancy areas.**

[X] (1) The cleanup level for bulk PCB remediation waste in low occupancy areas is ≤ 25 ppm unless otherwise specified in this paragraph.

As noted in the July 13, 2015 letter, the cleanup standard for this project will be ≤ 25 mg/kg.

(2) Bulk PCB remediation wastes may remain at a cleanup site at concentrations > 25 ppm and ≤ 50 ppm if the site is secured by a fence and marked with a sign including the M_L mark.

(3) Bulk PCB remediation wastes may remain at a cleanup site at concentrations > 25 ppm and ≤ 100 ppm if the site is covered with a cap meeting the requirements of paragraphs (a)(7) and (a)(8) of this section.

(5) **Site cleanup.** In addition to the options set out in this paragraph, PCB disposal technologies approved under §§761.60 and 761.70 are acceptable for on-site self-implementing PCB remediation waste disposal within the confines of the operating conditions of the respective approvals.

(i) **Bulk PCB remediation waste.** Any person cleaning up bulk PCB remediation waste shall do so to the levels in paragraph (a)(4)(i) of this section.

(B) Bulk PCB remediation waste may be sent off-site for decontamination or disposal in accordance with this paragraph, provided the waste is either dewatered on-site or transported off-site in containers meeting the requirements of the DOT Hazardous Materials Regulations (HMR) at 49 CFR parts 171 through 180.

[X] (1) Removed water shall be disposed of according to paragraph (b)(1) of this section.

Any water removed from the excavation must be decontaminated or disposed of as allowed under 40 CFR §761.61(b)(1).

[X]

(2) Any person disposing off-site of dewatered bulk PCB remediation waste shall do so as follows:

(i) Unless sampled and analyzed for disposal according to the procedures set out in §§761.283, 761.286, and 761.292, the bulk PCB remediation waste shall be assumed to contain ≥ 50 ppm PCBs.

(ii) Bulk PCB remediation wastes with a PCB concentration of < 50 ppm shall be disposed of in accordance with paragraph (a)(5)(v)(A) of this section.

(iii) Bulk PCB remediation wastes with a PCB concentration ≥ 50 ppm shall be disposed of in a hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA, or a PCB disposal facility approved under this part.

(iv) The generator must provide written notice, including the quantity to be shipped and highest concentration of PCBs (using extraction EPA Method 3500B/3540C or Method 3500B/3550B followed by chemical analysis using EPA Method 8082 in SW-846 or methods validated under subpart Q of this part) at least 15 days before the first shipment of bulk PCB remediation waste from each cleanup site by the generator, to each off-site facility where the waste is destined for an area not subject to a TSCA PCB Disposal Approval.

As noted in the July 13, 2015 letter and the July 14, 2015 email from MS Consultants, Inc., all soil ≥ 25 mg/kg initially excavated from the PCB remediation area will be transported to and disposed of at US Ecology, located in Bellville, Michigan (formerly EQ-Wayne Disposal). If confirmation samples exceed 50 mg/kg then additional material will be excavated and disposed of at Belleville, Michigan. If confirmation samples exceed 25 mg/kg, but are less than 50 mg/kg then additional material will be excavated and potentially disposed of at a non-hazardous facility as allowed under 40 CFR §761.61(a)(5)(i)(B)(2)(ii). Following the initial excavation, material segregation, if any, will be determined based on laboratory analytical results of confirmation samples and the area of inference for the confirmation sample as described in 40 CFR §761.298.

This Approval does not constitute a determination by EPA that the disposal facilities selected by the City of Youngstown are authorized to conduct the activities set forth in the Work Plan. The City of Youngstown is responsible for ensuring that its selected disposal facilities are not precluded from accepting PCB Remediation Waste under their permits.

(v) *Cleanup wastes.* Any person generating the following wastes during and from the cleanup of PCB remediation waste shall dispose of or reuse them using one of the following methods:

[X]

(A) Non-liquid cleaning materials and personal protective equipment waste at any concentration, including non-porous surfaces and other non-liquid materials such as

rags, gloves, booties, other disposable personal protective equipment, and similar materials resulting from cleanup activities shall be either decontaminated in accordance with §761.79(b) or (c), or disposed of in one of the following facilities, without regard to the requirements of subparts J and K of this part:

(1) A facility permitted, licensed, or registered by a State to manage municipal solid waste subject to part 258 of this chapter.

(2) A facility permitted, licensed, or registered by a State to manage non-municipal non-hazardous waste subject to §§257.5 through 257.30 of this chapter, as applicable.

(3) A hazardous waste landfill permitted by EPA under section 3004 of RCRA, or by a State authorized under section 3006 of RCRA.

(4) A PCB disposal facility approved under this part.

(6) Cleanup verification —

[X] (i) ***Sampling and analysis. Any person collecting and analyzing samples to verify the cleanup and on-site disposal of bulk PCB remediation wastes and porous surfaces must do so in accordance with subpart O of this part.*** Any person collecting and analyzing samples from non-porous surfaces must do so in accordance with subpart P of this part. Any person collecting and analyzing samples from liquids must do so in accordance with §761.269. Any person conducting interim sampling during PCB remediation waste cleanup to determine when to sample to verify that cleanup is complete, may use PCB field screening tests.

[X] (ii) ***Verification.***
(A) Where sample analysis results in a measurement of PCBs less than or equal to the levels specified in paragraph (a)(4) of this section, self-implementing cleanup is complete.
(B) Where sample analysis results in a measurement of PCBs greater than the levels specified in paragraph (a)(4) of this section, self-implementing cleanup of the sampled PCB remediation waste is not complete. The owner or operator of the site must either dispose of the sampled PCB remediation waste, or reclean the waste represented by the sample and reinitiate sampling and analysis in accordance with paragraph (a)(6)(i) of this section.

As noted in the July 13, 2015 letter, post-excavation sampling will be performed per Subpart O requirements.

(8) *Deed restrictions for caps, fences and low occupancy areas.* When a cleanup activity conducted under this section includes the use of a fence or a cap, the owner of the site must maintain the fence or cap, in perpetuity. In addition, whenever a cap, or the procedures and requirements for a low occupancy area, is used, the owner of the site must meet the following conditions:

(i) Within 60 days of completion of a cleanup activity under this section, the owner of the property shall:

- [X] (A) Record, in accordance with State law, a notation on the deed to the property, or on some other instrument which is normally examined during a title search, that will in perpetuity notify any potential purchaser of the property:
- (1) That the land has been used for PCB remediation waste disposal and is restricted to use as a low occupancy area as defined in §761.3.
 - (2) Of the existence of the fence or cap and the requirement to maintain the fence or cap.
 - (3) The applicable cleanup levels left at the site, inside the fence, and/or under the cap.

As noted in the June 17, 2015 application and the supplemental information provided, the entire Former Joseph Demsey Steel facility will be subject to a commercial/industrial land use only deed restriction under an Environmental Covenant that will be recorded with the Property Deed once the Covenant Not to Sue is issued by the Ohio EPA. Please ensure that the items required above under 40 CFR §761.61(a)(8)(i)(A) are included in the Environmental Covenant language and provide a draft copy containing the information to EPA.

Groundwater at the site is restricted under the Environmental Covenant as well as a site-specific Urban Setting Designation issued by Ohio EPA.

- [X] (B) Submit a certification, signed by the owner, that he/she has recorded the notation specified in paragraph (a)(8)(i)(A) of this section to the EPA Regional Administrator.

EPA requests an executed copy of the Environmental Covenant be provided when it becomes available.

Attachment C4
ABCA Document

ATTACHMENT C4
ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES
(ABCA)

Analysis of Brownfield Cleanup Alternatives
Former Joseph Demsey Steel Company Property
1300 South State Street
Youngstown (Formerly Girard), Ohio 44420
December 18, 2015

I. Purpose

The purpose of this memorandum is to document the previously completed OEPA VAP Property investigations (Phase I and II Assessments; obtain Clean Ohio Funds for remedial activities and clean up; submission of the No Further Action/Covenant Not to Sue to OEPA for approval; discovery of IA#8 and performance of additional assessment and partial remediation of IA#8; and the discovery of buried drums during the remediation of IA#8). As a result, of the discovery of drums in IA#8, it became apparent that an evaluation of alternate remedial strategies was necessary for IA#8 at the Former Joseph Demsey Steel Company Property site, located at 1300 South State Street, Youngstown (formerly Girard, Ohio 44420 (the Property)). IA#8 was not previously identified during the original Property evaluation processes, it was not until the end-user was installing an underground utility conduit for the pipe yard lighting, that IA#8 was discovered in 2015. As a result, of the discovery of IA#8, additional assessment activities were implemented at the Property in April 2015. IA#8 assessment work completed to date includes the installation of 16 soil borings, converting 3 of the 16 soil borings into groundwater monitoring wells and conducting a ground penetrating radar (GPR) survey (August 25, 2015) of the adjacent and surrounding area to determine if there are other areas of possible buried drums within the hillside along SR 422 (South Street). The GPR Survey Report (August 26, 2015) identified four (4) anomalies within the study area. The four anomalies were located using GPS surveying equipment and the limits delineated using wooden stakes and flagging. The identified anomaly locations were excavated to approximately 10 feet below the existing ground elevation to determine if any buried drums were present within the anomaly limits. Of the four (4) anomalies, anomaly #1 contained additional buried drums, the actual number is unknown at this time and will require additional delineation. Furthermore, anomaly#1 is located immediately adjacent (up-gradient) to the buried drums discovered in IA#8. The remaining anomalies (2 thru 4) did not contain drums of waste. The requested loan will be used to fund the remediation of IA#8. Consisting of further delineation and characterization of IA#8 wastes, which will lead to a full-scale site remediation plan and implementation using "Active" remedial technology that can simultaneously remediate the unknown number of leaking buried 55-gallon drums containing oily sludge and liquids, which are impacting the surrounding soils known as IA#8.

Previously, an Ohio Environmental Protection Agency (OEPA) Voluntary Action Program (VAP) Phase I Property Assessment was completed in October 2009 and updated in June 2014 by **ms consultants, inc. (ms)**. This assessment concluded there were multiple Identified Areas (IAs) on the Property in connection with the former commercial/industrial uses. An Interim VAP Phase II Property Assessment (March 2010) was conducted between October 2009 and March 2010. The Phase II Property Assessment was updated in October 2010. The "No Further Action" documentation for the Property was submitted to OEPA on July 29, 2014. The NFA is currently under review by the Ohio EPA.

Original sampling activities associated with a VAP Phase II Property Assessment (June 13, 2014) evaluated the soil and ground water at the Property for the effects of potential releases of hazardous substances and/or petroleum products. The Phase II investigation and report criteria were developed in accordance with the OEPA VAP. The site investigation sampling associated with the Phase II Property Assessment on the property was performed by **ms**, beginning on October 29, 2009 and completed on May 27, 2014. Demolition of on-site structures and remediation activities were completed between January and July of 2012 and May and June of 2014.

The Property had been vacant since the facility closed in 1991. The Property and surrounding area have been developed for commercial and industrial purposes since circa 1906. The subject Property has been used for steel-related purposes since circa the 1950's. General Steel Industries had operated the Property as a steel warehouse for mills and steel brokers for approximately 20 years when Joseph Demsey Steel Company (JDSC) acquired the Property in 1972. JDSC utilized the site as a steel processing facility with operations including steel leveling, cutting, blanking, and slitting. JDSC installed a pickling line at the Property, which operated from approximately 1982 through 1991. Raw hydrochloric acid (HCL) and spent pickling liquor were stored exterior to the facility in two elevated above-ground storage tanks (ASTs), each containing approximately 4,000-5,000 gallons of liquid material. These ASTs were relocated inside the facility circa 1985 within a diked trench area containing other ASTs utilized as part of the steel pickling and processing operation. At the time of the original assessments, the Property was vacant and not in use.

The surrounding area has been remediated and currently supports the V&M pipe storage yard. The 14.75-acre site has been developed into an active pipe storage yard for V&M.

II. Physical Location and Property Description

The Former Joseph Demsey Steel Company Property is located at 1300 South State Street, (formerly Girard) Youngstown, Ohio 44420, within the county of Trumbull. The Property encompasses approximately 14.77 acres, and is comprised of portions of current auditor parcel numbers 66-000006 in Youngstown and 14-607786 in Girard as described in Instrument numbers 200908110015721 and 200909040017388 of record in the Trumbull County Recorder's Office. Prior to the brownfield redevelopment partnership, the subject Property could be referenced as comprising original Trumbull County parcels: 14-124920 (6.50 acres), 14-124921 (3.979 acres), and 14-124922

(4.268 acres). The project site is approximately 14.75 acres and was surveyed and transferred to the applicant on October 8, 2008.

The VAP Property is currently being utilized by V&M as a pipe storage yard, with all above-ground structures previously identified areas (IA's) remediated in June 2014, with the exception of Identified Area 8 (IA#8), which is currently secured by hi-viz orange fencing, "Danger" No Trespassing and Keep Out signage.

III. Site History

The Property and surrounding area have been developed for commercial and industrial purposes since circa 1906. The subject Property has been used for steel-related purposes since circa the 1950's. General Steel Industries had operated the Property as a steel warehouse for mills and steel brokers for approximately 20 years when Joseph Demsey Steel Company (JDSC) acquired the Property in 1972. JDSC utilized the site as a steel processing facility with operations including steel leveling, cutting, blanking, and slitting. JDSC installed a pickling line at the Property, which operated from approximately 1982 through 1991. Raw hydrochloric acid (HCL) and spent pickling liquor were stored exterior to the facility in two elevated above-ground storage tanks (ASTs), each containing approximately 4,000-5,000 gallons of liquid material. These ASTs were relocated inside the facility circa 1985 within a diked trench area containing other ASTs utilized as part of the steel pickling and processing operation. At the time of the original Property assessments, the Property was vacant and not in use.

IV. Remedial Investigations

The following information details the environmental site assessments that were completed on the Property.

A Voluntary Action Program Phase I Property Assessment Report was prepared for the Property by **ms consultants inc.**, in June 2014, for the City of Youngstown. The report concluded that the property contained the following seven (7) Identified Areas:

- Former JDSC Pickling and General Plant/Warehouse Operations
- Terra-Cotta Drainage Pipe Area and Surrounding Vicinity (Documented Releases of Oil/Spent HCL via Storm Water Pipes)
- Former Transformer Substation Area (Soil & Concrete Staining)
- Former Office/Laboratory and Debris Piles (Building Materials and General Refuse)
- Former Location of HCL ASTs
- Historic Rail Spur
- Current Oil and Gas Well Operations Area

The Phase I Report indicated the IAs should be further investigated via a Phase II Property Assessment.

A Voluntary Action Program Phase II Property Assessment Report was prepared for the Property by **ms consultants inc.**, in June 2014, for the City of Youngstown.

Soil: The Phase II Property Assessment comprised installing 10 soil borings, 95 surficial soil samples (including confirmation samples) and three (3) test pits. A total of 110 soil and eight (8) ground water samples were collected and analyzed for COCs. Subsurface soil conditions at the Property consist of a fill layer, primarily made up of silt and gravel, with slag, brick and wood. The fill layer has an approximate thickness ranging from grade to approximately 4 feet below grade. Below the fill horizon, the soils generally grade into a cohesive layer ranging from fine-grained sandy silt to silty clays, underlain by granular soils consisting of silty sands and very coarse gravel containing fragments or weathered siltstone and shale. The cohesive layer is approximately 3 to 4 feet thick and extends to about 7 or 8 feet below grade. The underlying granular soil is at least 9 feet thick and extends below the termination depth of soil borings advanced at the Property. Bedrock was not encountered at the Property during drilling activities; however, shale bedrock was encountered off-property at the adjacent former asphalt plant at approximately 33 feet below grade. It is assumed that bedrock is situated below the Property at approximately 30 to 35 feet below grade. A total of 36 soil sample locations were determined to have concentrations 1,2,4-Trimethyl Benzene, PAHs, TPH, PCBs or lead in excess of applicable VAP direct contact soil standards commercial/industrial (DCSS). Concentrations of individual PAH compounds detected above VAP DCSS range between 9.1 and 840 mg/kg. Concentrations of TPH middle and heavy distillate ranges detected above applicable VAP DCSS range between 11,000 and 340,000 mg/kg. Concentrations of PCBs detected above applicable DCSS range between 24 and 240 mg/kg. 1,2,4-Trimethyl Benzene and lead were detected above applicable VAP standards at one location each at concentrations of 76 mg/kg and 1,350 mg/kg, respectively. Following site remedies including active soil removal, site filling and grading, implementation of an RMP, and enactment of an Environmental Covenant, the Property is in compliance with applicable soil standards. Point of compliance is 2 feet below grade for commercial/industrial use and 10 feet below grade for construction worker/excavation activities.

Groundwater: Four pre-existing wells were located at the site and four additional soil borings were converted to groundwater monitoring wells (DNW-1 through DMW-8). The uppermost saturated zone (Zone 1) occurs within unconsolidated granular material at an approximate depth of 7.5 feet below grade. Groundwater flow in the uppermost saturated zone trends to the west, towards the Mahoning River, at an approximate gradient of 0.0125 ft./ft.. The lateral extent of the uppermost saturated zone (i.e. Zone 1) is unknown; however, it is expected to be continuous below adjacent and nearby parcels. Based on the subsurface information obtained while drilling at the adjacent former asphalt plant (13NFA514), Zone 1 groundwater is expected to extend to the bedrock interface, suggesting a vertical saturated thickness of approximately 22 feet or more. A separate and distinct lower saturated zone was not encountered. Zone 1 groundwater below the Property exceeds applicable UPUS for benzene, PCE, TCE, VC, benzo(a)anthracene, carbazole, naphthalene and arsenic.

The groundwater below the site is Class A and subject to a USD, which recognizes that groundwater in the vicinity of the site is not being used as a source of potable water. Therefore, in accordance with OAC3745-300-10(E)(5), the volunteer must implement a remedy to eliminate on-Property exposures to groundwater, and demonstrate that contaminated on-Property groundwater will be protective for on-Property and off-Property non-consumptive purposes (i.e., process water, irrigation). Onsite use of groundwater will be restricted through enactment of the Environmental Covenant. Potential exposures to groundwater in trenches to C/E workers will be addressed through implementation of a RMP. Non-potable exposure to the shallow groundwater is not anticipated because groundwater does not discharge to the surface in the general vicinity of the site and no irrigation or production wells currently exist down-gradient of the site. Furthermore, if a non-potable well were to be installed in the future, it is unlikely the relatively low yielding uppermost saturated zone would be utilized. Site conditions quantitatively and qualitatively demonstrate that impacts from groundwater migration to the Mahoning River will not occur (sample results of surface water being conveyed below the site within a storm sewer collected at an off-Property influent location and effluent outfall at the down-gradient property boundary). Point of compliance: Property boundary and the area within the limits of the USD down-gradient of the Property.

Surface Water and Sediments: No surface water bodies or sediments were present on the Property. Surface water and sediments of the Mahoning River are located approximately 1/3 mile down-gradient of the Property. Point of compliance: NA

Indoor Air: Vapor intrusion (VI) to indoor air from VOCs in soil and groundwater was assessed through the Johnson & Ettinger indoor air model. VI evaluation indicates that the Property does not meet applicable standards through the indoor air pathway. An AUL will be implemented to restrict building occupancy at the site in absence of an engineering control or demonstration to the OEPA of achieving compliance with the VI pathway. Point of compliance: Indoor air.

Ecological receptors: There are no important ecological receptors on the Property. Potential off-Property ecological receptors associated with the Mahoning River are addressed through the groundwater migration pathway.

Chemicals of Concern (COCs): The following COCs were evaluated at the Property:

VOCs + GRO (soil and groundwater) by Method 8260B
SVOCs (soil and groundwater) by Method 8270B/8270C
PCBs (soil and groundwater) by Method 8082
RCRA Metals (soil and groundwater) by Methods 6010A, 6010B, Series 6000/7000
TPH (soil) by Method 8015A-modified/8015B

Property Specific Risk Assessment (PSRA): A Property-Specific Risk Assessment (PSRA) was conducted for the Property to evaluate the risk from pathways/exposure parameters not considered in the development of generic standards (e.g., volatilization

of chemicals in indoor air) as well as to evaluate the cumulative risk to receptors from all complete pathways, COCs and media. The PSRA provides comprehensive risk ratio derivation worksheets and modeling support files.

Certified Laboratories: CompuChem (CL0060) and EA Group (CL0015)

Remedial Activities: Remedial actions relied upon in order to achieve applicable standards include active removal of contaminated soil from the direct contact POC for C/I workers, modification of the C/I direct contact POC through site filling and grading, implementation of an RMP, and enactment of an Environmental Covenant. Site clean-up activities also included the removal of industrial waste materials, including process tanks, abandoned drums, piles of various waste materials (i.e., construction debris, scrap metal and municipal trash), liquids collected in floor pits and vats, and prior to building demolition, regulated asbestos containing materials (RACM).

Operations and Maintenance/Engineering Controls/Risk Mitigation Plans: An RMP will be implemented at the site during any future construction activity to notify workers of the potential for encountering contaminated soil and/or groundwater and to provide guidance for handling and management of any contaminated material so that the site achieves and/or remains in compliance with the applicable standards set forth in the CNS. Compliance does not rely on engineering controls.

Institutional Controls: The owner will enter into an Environmental Covenant with OEPA to ensure continued compliance with applicable standards based on the intended use of the Property. The covenant will apply to the Property owner and all subsequent owners, and will limit lands uses on the Property to commercial and/or industrial as set forth in OAC 3745-300-08(C)(2). The covenant will also prohibit the extraction of groundwater across the entire Property for any purpose other than monitoring, remediation and temporary dewatering and place restrictions for building occupancy at the Property in absence of an engineering control or demonstration of achieving applicable standards through the vapor intrusion pathway.

Determination and Compliance with Applicable Standards: Following active site remediation, enactment of the environmental covenant, and implementation of the RMP, the Property is in compliance with VAP applicable standards for commercial and industrial land use and future construction worker/excavation activities.

Additional Property Investigation of the Newly Identified Area #8 was conducted for the Property by **ms consultants inc.**, in April 2015, for the City of Youngstown.

As a result, of the discovery of IA#8, additional assessment activities were implemented at the Property in April 2015. IA#8 assessment work completed to date included the installation of 16 soil borings, converting 3 of the 16 soil borings into groundwater monitoring wells and conducting a ground penetrating radar (GPR) survey (August 25, 2015) of the adjacent and surrounding area to determine if there are other areas of possible buried drums within the hillside along SR 422 (South Street). The GPR Survey

Report (August 26, 2015) identified four (4) anomalies within the study area. The four anomalies were located using GPS surveying equipment and the limits delineated using wooden stakes and flagging. The identified anomaly locations were excavated to approximately 10 feet below the existing ground elevation to determine if any buried drums were present within the anomaly limits. Of the four (4) anomalies, anomaly #1 contained additional buried drums, the actual number is unknown at this time and will require additional delineation. Furthermore, anomaly#1 is located immediately adjacent (up-gradient) to the buried drums discovered in IA#8. The remaining anomalies (2 thru 4) did not contain any additional drums of waste materials or drums of any kind. Based upon the original delineation investigation and additional GPR Survey activities of IA#8 the area requiring remediation is determined to be approximately **3,373 SF** in size. Additional sampling results associated with IA#8, indicated that the soils were impacted by PCBs in soil ranging between 0.043 mg/kg and 190 mg/kg. However, only one specific sample location as determined to have PCBs concentrations above the applicable TSCA threshold of 50 mg/kg –DSB-15, 0-2' (190 mg/kg). Other occurrences of PCB impact in soil had concentrations below the TSCA limit.

Elevated levels of COCs detected in groundwater below the Property included volatile organic compounds (VOCs) benzene, tetrachloroethene (PCE), trichloroethene(TCE), vinyl chloride (VC); single-compound PAHs and arsenic. Dissolved PCBs were not detected in groundwater at the Property and no light (or dense) non-aqueous phase liquids (LNAPL) was encountered in any of the monitoring wells.

Remedial Activities Completed to Date at IA#8: Due to the discovery of IA#8, which was outside any former operations area(s) at JDSC, the aforementioned site investigation activities were implemented at the site. As stated previously the new IA (IA#8) was discovered after the NFA submittal for the JDSC Property. A Self-Implementing PCB Remediation Work Plan was developed for IA#8 in accordance with 40 CFR 761.61(a) and submitted to US EPA Region V for review and concurrence. Additionally, bidding documents and remediation workplans and specifications were developed for the site to address IA#8. Upon approval of the Self-Implementing PCB Remediation Work Plan, the City of Youngstown put the project out for bid and retained the services of an environmental remediation contractor to implement the IA#8 PCB Remediation Workplan. In July of 2015, the remediation work associated with IA#8 was initiated, which included; excavation of the PCB contaminated soil as directed by the environmental consultant; load, transport, and dispose of the PCB contaminated soil at a facility licensed and permitted to accept soils of this nature; acquire, transport and place clean fill into the excavation sufficient to return the excavation to surrounding grade; conduct any sampling and analysis necessary to properly characterize the excavated material for acceptance at a disposal facility; provide manifests and weigh tickets for each load of excavated material removed from the site. Soils containing PCB concentrations in excess of 50 ppm were transported and disposed of at U.S. Ecology, located in Belleville, Michigan.

The retained environmental remediation contractor commenced work in July 2015, five (5) loads (approx. 100 tons) of impacted soils were removed from IA#8 and loaded into

tractor trailers for transportation and disposal at US Ecology in Belleville, Michigan. While waiting for additional trucks to arrive at the site for loading, the environmental remediation contractor unearthed 13+ deteriorated buried 55-gallon drums (previously unknown) containing an oily sludge and liquids along the eastern boundary of IA#8. Upon this discovery soil excavation activities and loadout were immediately stopped, so that additional samples of the oily sludge could be collected for analysis, as visually the previously approved waste profile appeared to have changed. **ms consultants, inc.**, site representative collected samples of the oily sludge and the surrounding impacted soils for possible new waste profiling purposes. Analytical results indicated that the waste profile had definitely changed, as the oily sludge contained PCBs (Aroclor 1254) at a concentration of 2,100 mg/kg, benzene at 320 mg/kg, ethylbenzene at 750 mg/kg, cis-1,2-Dichloroethene at 30 mg/kg, isopropyl Benzene at 140 mg/kg, n-propylbenzene at 83 mg/kg, styrene at 1,300 mg/kg, toluene at 1,500 mg/kg, trichloroethene at 5,200 mg/kg, 1,2,4,-Trimethylbenzene at 6,000 mg/kg, 1,3,5-Trimethylbenzene at 3,300 mg/kg and xylenes at 12,000 mg/kg. In addition, a TCLP sample was collected, as well, analytical results indicated, benzene at 8.3 mg/l, 1,2-Dichloroethane at 0.21 mg/l, trichloroethylene at 11 mg/l, ignitability at 2.9 mm/second, corrosivity at 7.0 pH units and Aroclor 1254 at 35 mg/kg. Based on the newly acquired analytical data, US Ecology could no longer accept the waste so the remediation project was placed on hold until a disposal facility able to accept the waste could be located. Based on the analytical results, it appears that the waste must be incinerated due to the levels of PCBs and volatile organic compounds. As a result, the City of Youngstown cannot incur the costs associated with what appears to be the only disposal option (incineration). Hence, the remediation activities were abandoned until funds could be secured to complete the work associated with IA#8.

Upon implementation and completion of the site remediation plan, consisting of "Active" soils and drum(s) removal activities, enactment of the environmental covenant, and implementation of the RMP, the Property will be in compliance with VAP applicable standards for commercial and industrial land use and future construction worker/excavation activities. An addenda shall be developed and incorporated into the NFA submission to the OEPA for review and issuance of the CNS.

V. Proposed Actions and Estimated Costs

At this time, the City of Youngstown is pursuing supplemental funding through the Ohio Development Services Agency – Brownfield Revolving Loan Fund for in order to complete the necessary remediation of IA#8. Previously completed site activities utilized the Clean Ohio Brownfield Program CORF Grant for brownfield assessment, remediation, and redevelopment.

The estimated cost for completion of the remediation of IA#8 is \$2,000,000.00.

VI. Alternative Analysis

Alternative actions for the PCB remediation project are as follows:

1) Excavation and Landfill Disposal :

- a. Effectiveness - this would effectively remove all PCB materials from the site to the excavated depth, so risk would be reduced for direct contact with soil once a cap of clean fill was placed. Engineering and institutional controls, including an operation and maintenance plan, will be necessary following this action. However, burial in landfills is not considered a destruction technology; rather a method of disposal and containment, however the landfill must be authorized to accept PCB contaminated wastes. The limitations of this technology is that landfill disposal of PCB contaminated soils does not provide waste reduction or destruction, only containment. Persistent substances like PCB waste will remain in landfills for long periods of time with little degradation. In addition, the waste must contain no free liquids, therefore it may be necessary to pretreat the waste by processes such as thermal desorption to dewater the contaminated waste prior to landfill disposal.
- b. Ability to implement - this action can be implemented using standard remediation techniques. However, a barrier to implementation would be limitations of the TSCA Landfill regarding acceptance of PCB waste in excess of 50 ppm. Based on the COCs concentrations (volatile organics) in addition to the elevated levels of PCBs present in the contaminated soils and 55-gallon drums prevents landfilling of this waste.
- c. Cost – Landfill disposal of PCB contaminated soil is relatively inexpensive compared to other available treatment technologies. Disposal costs are mostly those of transportation and disposal rather than treatment and disposal is often the most economical choice for waste remediation. However, TSCA landfills capable of taking more than or equal to 50 mg/kg PCB soil have yearly tonnage acceptance limits. These limits are set by the state in which they are located and are specified in the landfill's operating permit. The cost associated with this alternative for excavation, transportation and landfill disposal is estimated to be \$301,275.00.

2) Remediation using Incineration technology:

- a. Effectiveness – This technology has proven to successfully remediate PCB contamination in soil and sediments by effectively destroying the PCBs.

- b. Ability to implement – The largest challenge in this alternative is waste preparation including excavating and/or transporting the waste to the incinerator. As the number of incinerators able to accept the waste are limited. Based on the analytical results for IA#8, it appears incinerators are to accept the waste are located in Texas or Nevada based on previously conducted inquiries during the initial attempt to remediate IA#8 in July 2015.
- c. Cost - the cost for the removal, transportation to the incinerator, and destruction of the PCB waste is estimated to be \$2,000,000.00 based on current approximately quantities.

3) No Action:

- a. Effectiveness - leaving PCBs and volatile organic compounds contamination in its current state would pose an increased risk as contamination continues to migrate over time. Although some natural attenuation will occur, the Property will be a risk to human health and the environment due to levels of contamination in perpetuity without active remediation efforts.
- b. Ability to implement - this action requires no implementation.
- c. Cost - while there is no initial cost to this action, this option is not protective of human health and the environment, does not significantly reduce toxicity, mobility, or volume of waste, nor does it prepare the site for any sort of economically productive future use. If the chronic effects of this site on the local environment and surrounding communities are considered, this option would be the most costly.

VII. Recommended Alternative

Based on a comparison of the effectiveness, the ability to implement, and cost of each alternative, Alternative No. 2 is the recommended alternative. This remedy fully addresses the threat to public health and the environment and permits the Project to proceed in a timely fashion. Although, this remedy is the most expensive, it may be possible to reduce the volume of waste requiring incineration, by the removal of the less contaminated overburden soils, conducting extensive sampling/analysis using a grid system in the areas of extensive contamination of IA#8. Thus, based on the laboratory analysis the waste streams may be able to be segregated into two (2) separate waste streams, reducing the volume of soils requiring incineration and increasing the volume of soils, which could be disposed of at a landfill permitted to accept the PCB waste based on the laboratory concentrations of chemicals of concern. Thus, saving/reducing loan monies, that would be necessary to remediate IA#8 and reducing the effect on the climate

VIII. Public Participation

Public notice of this application for funding, including this Analysis of Brownfield Cleanup Alternatives, will be in *Youngstown Vindicator* and made available in electronic format on the City of Youngstown's website in accordance with the Community Relations Plan for the project.

IX. Effect of Recommended Alternative on Climate Change

PCBs are synthetic and produced as either a singular congener, as a homogenous group or as a mixture. They are non-flammable, stable, have a high boiling point and exhibit electrical insulating properties. As such PCBs have been used as coolants and lubricants in transformers and other electrical equipment, as hydraulic fluids, and as plasticizers, pigments, dyes and carbonless copy paper ink. They are also generated and released into the environment as waste byproducts of chemical manufacturing and incineration. Unfortunately, in some cases disposal options are limited by operating permit limits of disposal facilities and in this case it appears that the only disposal option to handle this waste is incineration, however, it may be possible to reduce the amount of waste requiring incineration, by conducting extension sampling and waste segregation. Thus reducing the effect on the climate.

Fischer, Brian

From: erin.hazelton@development.ohio.gov
Sent: Wednesday, February 03, 2016 3:52 PM
To: Fischer, Brian
Subject: Dempsey Steel approval

Hi Brian,

The ABCA and CRP are approved by USEPA so you are clear to begin the public review. Once that is going, let's find some time for a quick call (let's include Sharon too) to discuss what we need to do from here in order to keep the process moving along quickly. I'll need to request a final extension of our agreement with USEPA beyond the March 31st deadline in order to actually complete the work so I want to make sure we are all still on board to move forward before I do that.

Thanks,

Erin



Erin Hazelton
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Email to and from the Ohio Development Services Agency is open to public inspection under Ohio's public record law. Unless a legal exemption applies, this message and any response to it will be released if requested.

The State of Ohio is an Equal Opportunity Employer and Provider of ADA Services.

Attachment C5

Tier I Property Assessment Report

N/A